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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/707,272	12/02/2003	Leon R. Manole	2003-056	1271

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EXAMINER	
HAYES, BRET C	

ART UNIT	PAPER NUMBER
3644	

DATE MAILED: 10/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/707,272	MANOLE ET AL.	
	Examiner	Art Unit	
	Bret C. Hayes	3644	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 August 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5,7-14 and 18-39* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5,8,11-14,18-23,29 and 31-39* is/are rejected.

7)☒ Claim(s) *7,9,10,24-28 and 30* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The use of the trademark CHEMLUCENT has been noted in this application. It should be capitalized wherever it appears and be accompanied by the generic terminology.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner, which might adversely affect their validity as trademarks.

Examiner also notes that what is currently described in the specification is NOT what is described by the Trademark, namely, a hydrogen peroxide solution. Care should be taken when revising the specification to avoid such and any similar errors – note "CHEMILUCENT" as well. For the record examiner submits the Material Safety Data Sheet disclosing the trademark status of the term(s) as of at least 04/2003.

2. Claims 6 and 15 – 17 have been canceled, but for unknown reasons.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 2, 3, 11 – 14, 18, 20, 21, 31 – 34 and 36, rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Because Applicants disclose the chemlucent chemicals as at pp **[0006]**, lines 8 – 12,

"Chemlucents (reference is made to U.S. patent 6,497,181) are used to mark a target in low light conditions in visible and IR light without any flame source and little heat output. Chemlucents may also be used to provide a trace of the projectile flight.", and, pp **[0010]**, lines 3 & 4, "Included with these heat chemicals may be optional chemlucents as taught in U.S. Patent 6,497,181.", both of which are erroneous due to a lack in US Patent No. 6,497,181 of any recitation of the term "chemlucent", while the MSDS cited above states that ChemLucent is a hydrogen peroxide solution, which, while hydrogen peroxide is a known activating agent – see US Patent No. 3,774,022 to Dubrow et al., at col. 3, below "EXAMPLE", hydrogen peroxide is not capable of such "marking" as disclosed alone. Therefore, any such limitations are not enabled.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

6. Claims 8, 31 – 35, 37 and 38 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

7. Claim 8 recites the limitation "scattering the containment bag", which is unclear. How does a single bag scatter exactly? Perhaps the separate bags of claim 4 scatter instead?

8. Claims 31 and 32 recite the limitation "the first and second chemlucent chemicals". There is insufficient antecedent basis for these limitations in the claims.

9. Claims 33 and 34 are rejected as dependent upon a rejected base claim.

10. The term "heat conducting" in claim 35 is a relative term, which renders the claim indefinite. The term "heat conducting" is not defined by the claim, the specification does not

provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Because conduction is a continuous physical characteristic, a thing cannot either be entirely heat conductive nor can it be completely unable to conduct heat – it must do so to some degree. Therefore the metes and bounds of the claimed "material " cannot be ascertained at this time.

11. The term "non-heat conducting" in claims 37 and 38 is a relative term, which renders the claim indefinite. See above with respect to claim 35, for example.

12. In light of the above, the claims will be examined ***as best understood***.

Claim Rejections - 35 USC § 102

13. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

14. Claims 1, 19, 35 and 39 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent No. 5,415,151 to Fusi et al. (*Fusi*).

15. Re – claims 1, 19 and 39, Fusi discloses the claimed invention including a flameless tracer* (claim 19 – marker*) utilizing heat marking chemicals, for use with a projectile (claim 39 – a plurality of projectiles) **10e**, for example, comprising: a first heat chemical** carried by the projectile(s) for emitting heat during a flight of the projectile such heat visible to an observer with thermal sensing devices and/or night vision devices***; and a second heat chemical**** delivered by the projectile(s).

16. *Re – the terms 'tracer' and 'marker' are defined in the specification as "Tracers/marker projectiles are chambered in and fired from a gun in the same manner as all other ammunition", pp **[0011]**, lines 1 and 2, which does nothing to exclude the prior art reference cited.

17. **Re – first heat chemical carried by the projectile, Fusi discloses at col. 6, around lines 30 and 31, that "capsules **30** may also be formed of a phosphor-containing material." Phosphor is a known material used in tracers and luminescence. Further, according to

"http://scienceworld.wolfram.com/physics/Phosphorescence.html,"

Phosphorescence [is] a quasi-stable electron excitation state involving a change of spin state (intersystem crossing), which decays only slowly. In phosphorescence, light emitted by an atom or molecule that persists after the exciting source is removed. It is similar to fluorescence, but the species is excited to a meta-stable state from which a transition to the initial state is forbidden. Emission occurs when thermal energy raises the electron to a state from which it can de-excite. Therefore, phosphorescence is temperature-dependent.

What does that mean? It means that, since phosphorus is a chemical element and since phosphorescence is temperature-dependent, 'phosphor-containing material' qualifies as a "first heat chemical" and Fusi anticipates this limitation as claimed.

18. *** Re – with thermal sensing devices and/or night vision devices, if one can see the temperature-dependent phosphor at night, which, according to Fusi, one can, then one has either the thermal sensing device and/or the night vision device inherently provided in one's eye(s).

19. ****Re – second heat chemical delivered by the projectile, Fusi discloses prior to the above at around lines 13 – 27, for example, that a target can be marked using phosphor carried

within a capsule when the capsule bursts upon striking the target. Because phosphor qualifies as heat chemical above, Fusi also clearly anticipates a "second heat chemical" as claimed.

20. Re – claim 35, in light of the above, the materials inherently conduct a degree of heat.

Claim Rejections - 35 USC § 103

21. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

22. Claims 2 – 4, 5, 11, 18, 20 – 22, 23, 29, 36, are rejected under 35 U.S.C. 103(a) as being unpatentable over Fusi as applied above in view of US Patent No. 3,774,022 to Dubrow et al. (*Dubrow*).

23. Re – claims 2, 3, 20 and 21, Fusi discloses the invention substantially as claimed as applied above except for the first (and second) heat chemical comprises a chemlucent chemical. ***As best understood***, Dubrow teaches the use of hydrogen peroxide in the same field of endeavor for the purpose of activating a chemical reaction. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Fusi to have the heat chemicals comprise hydrogen peroxide as taught by Dubrow in order to activate a chemical reaction.

24. Re – claims 4 and 22, Fusi discloses the invention substantially as claimed as applied above except for the first and second chemicals being contained in separate bags with the projectile. Dubrow teaches first and second chemicals, multiple **47**'s as seen in Fig. 5, for example, being contained in separate capsules within a projectile in the same field of endeavor for the purpose of generating luminescent light, see col. 8, line 2, for example. It would have

been obvious to one of ordinary skill in the art at the time the invention was made to modify Fusi to include first and second chemicals in separate containers ('bags' and 'capsules' being well known art recognized equivalents of each other) as taught by Dubrow in order to generate luminescent light.

25. Re – claims 5 and 23, Fusi in view of Dubrow discloses the invention as claimed. Dubrow further teaches the containers being within a containment container **46**, for example, in the same field of endeavor for the purpose of containing the capsules **47** and **48**, for example. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Fusi further to include a container for the separate containers as taught by Dubrow.

26. Re – claims 11 and 29, see rejection of claims 2 and 3 reference art recognized equivalents.

27. Re – claims 18 and 36, Fusi discloses the capsules being transparent, as at col. 6, line 27.

Allowable Subject Matter

28. Claims 7, 9, 10, 24 – 28 and 30 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication should be directed to Bret Hayes at telephone number (571) 272 – 6902. The examiner can normally be reached Monday through Friday from 5:30 am to 2:00 pm, Eastern Standard Time.

On July 15, 2005, the Central FAX Number was changed to **571-273-8300**. This new Central FAX Number is the result of relocating the Central FAX server to the Office's Alexandria, Virginia campus.

Most facsimile-transmitted patent application related correspondence is required to be sent to the Central FAX Number. To give customers time to adjust to the new Central FAX Number, faxes sent to the old number (703-872-9306) will be routed to the new number until September 15, 2005. After September 15, 2005, the old number will no longer be in service and **571-273-8300** will be the only facsimile number recognized for "centralized delivery".

If attempts to contact the examiner by telephone are unsuccessful, the examiner's supervisor, Teri Luu, can be reached at (571) 272 – 7045.

bh

13-Oct-05

TERI PHAM LUU
SUPERVISORY
PRIMARY EXAMINER